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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/711,118	11/09/2000	Rocco A. De Lillo	10722.270	6442

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EXAMINER

LEE, BENNY T

ART UNIT	PAPER NUMBER
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2817

DATE MAILED: 12/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 711118	Applicant(s) De Lillo et al
Examiner B. Lee	Group Art Unit 2817

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE Three (3) MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on 26 June 2002
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

24-26, 28-30, 32, 33

- ☒ Claim(s) 1-4, 6-8, 10, 11, 13-15, 17-19, 21, 22 is/are pending in the application.
- Of the above claim(s) 13-15, 17-19, 21, 22 is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-4, 6-8, 10, 11, 23-26, 28-30, 32, 33 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☒ Claim(s) 1-4, 6-8, 10, 11, 13-15, 17-19, 21, 22, 24-26, 28-30, 32, 33 are subject to restriction or election requirement.

Application Papers

- ☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☒ The drawing(s) filed on 8 Jan 2002 is/are objected to by the Examiner.
- ☒ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
 - ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
 - ☐ received in Application No. (Series Code/Serial Number) _____
 - ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s) 2, 3
- ☒ Notice of Reference(s) Cited, PTO-892
- ☒ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

Office Action Summary

Art Unit: 2817

Applicant's election of Invention I, claims 1-8, 10, 11, 13-19, 21-30, 32, 33 in Paper No. 10 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

However, a review of the above elected claims indicates that claims 13-15, 17-19, 21, 22 are directed to the non-elected method and hence will be withdrawn, thereby leaving claims 1-4, 6-8, 10, 11, 23-26, 28-30, 32, 33 subject to examination.

Claims 13-15, 17-19, 21, 22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a non-elected invention, there being no allowable generic or linking claim. Election was made without traverse in Paper No. 10.

The disclosure is objected to because of the following informalities: Page 1, line 28 and page 2, line 1, note that "long packaging" should be rephrased for a better description. Page 3, lines 1, 8, note that "OP" and "CTE" need to be strictly defined. Page 13, lines 21-26, note that reference to (P1, P2, P3, P4.) are vague in meaning and needs clarification.

Appropriate correction is required.

The disclosure is objected to because of the following informalities: Note that all drawing figures need to be explicitly described in the specification. For example, figs. 7, 8, 11-22, 26b, 27a, 27b need explicit individual description in the specification. Also, for each individual drawing figure, each reference label therein needs on explicit description. For example, fig 2a

Art Unit: 2817

(~~140~~, ~~150~~, ~~160~~, ~~170~~); figs. 5a, 5b (310, 320); fig. 6 (320, 501), etc. need explicit description relative to the corresponding specifications description of the drawing.

Appropriate correction is required.

The drawings are objected to because of the following: In fig. 2a, the ~~--2--~~axis--needs to be shown; In figs. 12-17, note that (P1, P2, P3, P4) need to be labeled as per the specification description (see p 13, ls 21-26); In fig. 23, note that reference label ~~--2301--~~needs to be provided. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claims 1-4, 6-8, 10, 11; 23-26, 28-30, 32, 33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims ~~1~~, ~~23~~ note that it is unclear, even in light of the specification, what characterizes "defining levels". Clarification is needed.

In claims 1-4, 23-26, note that "spiral-like" expands the scope of "spiral", thereby rendering the spiral shape vague and indefinite. (I.e. what shapes is encompass by "spiral-like"?)

In claim ~~7~~, note that it is unclear what characterizes "a plurality of planes" (i.e. "Planes" of what?). In claims ~~10~~, ~~11~~, ~~32~~, ~~33~~, note that these claims improperly depend from respectively canceled claims.

Art Unit: 2817

Regarding claims 23, 28-30, the word "means" is preceded by the word(s) "substrate", "metal layer" and "coupling lines, respectively" in an attempt to use a "means" clause to recite a claim element as a means for performing a specified function. However, since no function is specified by the word(s) preceding "means," it is impossible to determine the equivalents of the element, as required by 35 U.S.C. 112, sixth paragraph. See *Ex parte Klumb*, 159 USPQ 694 (Bd. App. 1967).

The following claims have been found objectionable for reasons set forth below:

In claims ~~1~~, 23, note that --respective-- should precede each occurrence of "surfaces" for a proper characterization.

In claim ~~8~~, note that "is" should be rewritten as --comprises-- for a better characterization.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

Art Unit: 2817

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4, 6, 8; 23-26, 28-30 are ^{rejected} ~~(a)~~ as being unpatentable over Fujiki in view of Juskey et al.

Fujiki (Fig. 2) discloses a multi-layer coupler arrangement comprising a multi-layered substrate (2-7) upon which conductive layers are disposed on surfaces thereof.

The conductive layers include a first set of ground layers (2b, 4b, 6b) on respective substrates (2, 4, 6) and which are interconnect by conductors (2c-7c). Also a spiral shape coupler (3a- 3f; 5a-5f) is disposed on substrate layers (3,5). Moreover, note that the spiral shape coupler includes coplanar lines (e.g. 5f, 5g; 3f, 3g) respectively arranged on different planes. Furthermore, the different co-planar lines define four (i.e. at least three) individual coupling lines. Fujiki differs from the claimed invention in that the substrate layers material is not a fluropolymer as claimed and the spiral shapes (i.e. circular, oval, etc) are not as claimed.

Juskey et al discloses, as an exemplary teaching thereof, the use of fluropolymer (i.e. fluroplastic) material for substrate layers which support transmission line conductors in multi layer board structures.

Notes that Juskey et al discusses that fluoroplastics have lower dielectric constants as compared to conventional glass (i.e. a ceramic) epoxies used in multi layer structure and thus provides benefits in reducing propagation delay and dielectric losses. See the "Background" in col 1 of Juskey et al.


Art Unit: 2817

Accordingly, it would have been obvious in view of the references, taken as a whole to have realized the multi-layer substrate of Fujiki as having a fluropolymer material instead of the conventional ceramic material.

Such a modification would have been obvious in view of the exemplary teaching in Juskey et al that fluoroplastic substrate materials provide advantages with respect to propagation delay and dielectric loss as compared to conventional ceramic (e.g. glass epoxies) multi-layered substrates, thereby suggesting the obviousness of the combination. Although the spiral shape coupler of the combination is rectangular in form, obviously alternative yet equivalent spiral shapes (e.g. circular, oval, etc) would have also been usable, especially since the coupler's function would not have been affected by its shape.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Taketa et al and Gou et al ('005) pertain to multi-layer couplers..

Any inquiry concerning this communication should be directed to Benny Lee at telephone number (703) 308-1902.


BENNY T. LEE
PRIMARY EXAMINER
ART UNIT 2817

B LEE/pj

11/21/02